

ABSTRACT

A sampling rate converter able to obtain an amplitude characteristic that passes any frequency and able to achieve a high precision conversion without depending upon a cutoff frequency, having an up sampler 103 for inserting $(U-1)$ zero points between signals and raising a sampling frequency F_{si} U -fold, a convolution processing unit 104 including an FIR filter and interpolating a value by convolution with respect to output signals of the up sampler, and a linear interpolation block 105 for selecting two points of samples from the output signal of the convolution processing unit 104 having a sampling frequency UF_{si} and finding the value at a required position from the linear interpolation, wherein the FIR filter has an impulse response becoming a filter coefficient, having a transmission function $H(z)$ associated with a transmission function $Z(z)$ of a pre-filter, and having a filter coefficient set by performing weighted approximation with respect to a desired characteristic associated with the frequency response of the pre-filter.